

Message Text

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USDOE FOR BILLY HILL

E.O. 11652: N/A
TAGS: TGEN, ENRG, US, UR, OREP (WYDLER, JOHN)
SUBJECT: SOVIET VIEWS ON FAST BREEDER REACTOR AND NON-
PROLIFERATION

1. SUMMARY - MEETING OF REP. JOHN WYDLER WITH STATE
COMMITTEE FOR ATOMIC ENERGY (SCAE) OFFICIALS MARCH 29
PROVIDED GOOD OPPORTUNITY FOR EXCHANGE OF VIEWS ON FAST
BREEDER REACTOR DEVELOPMENT AND NON-PROLIFERATION ISSUES.
SOVIETS CLAIM FAST BREEDER REACTORS ARE ESSENTIAL FOR
THE DEVELOPMENT OF NUCLEAR POWER. THEY EXPRESS UNDER-
STANDING OF DANGERS OF PLUTONIUM PRODUCTION, BUT WILL
NOT BE DETERRED FROM RAPID DEVELOPMENT OF NATIONAL FAST
BREEDER REACTOR AND REPROCESSING PROGRAMS. SOVIETS
EXPRESSED NO INTEREST IN THE THORIUM CYCLE; HOWEVER, THEY
CLAIM TO HAVE A PROGRAM RESEARCH SIMILAR TO CIVEX TO
RENDER THE PLUTONIUM CYCLE LESS DANGEROUS AS A MEANS OF
PROLIFERATION. END SUMMARY.

2. REPRESENTATIVE JOHN R. WYDLER, HOUSE S&T COMMITTEE
EXPERT DUGAN AND SCICOUNS MET AT SCAE MARCH 29 WITH SCAE
DEPUTY CHAIRMEN MOROZOV AND MESHKOV FOR GENERAL DISCUSSION
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OF NUCLEAR PROGRAMS OF BILATERAL CONCERN. THE FOLLOWING
POINTS OF INTEREST WERE NOTED REGARDING SOVIET NUCLEAR
PROGRAMS:

(A) MOROZOV CLAIMED THAT THE FAST BREEDER PROGRAM WAS
ABSOLUTELY ESSENTIAL FOR THE RATIONAL DEVELOPMENT OF
NUCLEAR POWER, NOTING THAT ONLY TWO PERCENT OF URANIUM

RAW MATERIAL IS UTILIZED IN THE LIGHT-WATER REACTOR CYCLE. HE WAS UNWILLING TO CITE SOVIET URANIUM RESOURCE DATA, BUT CLAIMED THAT WORLD SUPPLY OF URANIUM WILL BE EXHAUSTED IN 50 TO 100 YEARS IF BREEDERS ARE NOT DEVELOPED. MOROZOV NOTED THAT URANIUM OXIDE COSTS HAVE DOUBLED AND ENRICHMENT COSTS SERVICE INCREASED BY 40 PERCENT DURING THE PAST FIVE YEARS, WHICH UNDERLINES THAT BREEDERS ARE NECESSARY TO MAKE NUCLEAR POWER ECONOMICALLY FEASIBLE. ALSO IMPORTANT FROM SOVIET POINT OF VIEW IS THAT BREEDER REACTORS WILL MAKE NATIONAL NUCLEAR POWER PROGRAM ESSENTIALLY INDEPENDENT FROM SOURCES OF URANIUM SUPPLY.

(B) EVEN THOUGH CLOSELY QUESTIONED, MOROZOV DECLINED TO GIVE ANY DATA ON SIZE OF SOVIET FAST BREEDER REACTOR PROGRAM, SIMPLY NOTING SUCH WAS A LARGE NATIONAL PROGRAM AND WILL HAVE CONTINUED SUPPORT. MOROZOV STATED THE SOVIET BN-600 FAST BREEDER IS SCHEDULED FOR COMPLETION IN 1978-80, AND HAS BEEN SUBJECT TO DELAYS BY LATE DELIVERY OF EQUIPMENT. MESHKOV NOTED COST OF BN-600 IS 400 TO 500 RUBLES PER INSTALLED KILOWATT, 50 PERCENT GREATER THAN INSTALLED KILOWATT COST FOR BN-350. MOROZOV CLAIMED THAT CONSTRUCTION OF BN-1600 WILL START AFTER 1980, AND WILL TAKE SEVEN OR EIGHT YEARS TO COMPLETE. MOROZOV DOWNPLAYED SOVIET HYBRID BREEDER PROGRAM AS AN ALTERNATIVE TO FAST BREEDERS FOR PLUTONIUM PRODUCTION.

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(C) MOROZOV REFUSED TO PROVIDE ANY DATA ON THE SIZE OF REPROCESSING EFFORT. HE CONFINED HIS REMARKS TO NOTING THAT CONSTRUCTION OF REPROCESSING FACILITIES WILL KEEP PACE WITH THE BREEDER PROGRAM. HE ALSO NOTED THAT SOVIET REQUIREMENT FOR RETURN TO THEM OF SPENT FUEL FROM COUNTRIES THEY SUPPLY ADDS TO THE NEED FOR RAPID DEVELOPMENT OF REPROCESSING FACILITIES IN THE SOVIET UNION.

3. MOROZOV STATED THAT FAST BREEDER REACTORS SHOULD BE UNDER IAEA CONTROL, HOWEVER, THE SOVIETS DO NOT CONSIDER THEM ANY MORE DANGEROUS PROLIFERATORS THAN LIGHT-WATER PLANTS. MOROZOV DISPLAYED A GOOD UNDERSTANDING OF THE CIVEX PROCESS, NOTING THAT RESEARCH IN THE SOVIET UNION IS ALSO PROCEEDING ON MEANS TO RENDER THE PLUTONIUM CYCLE LESS DANGEROUS. HE NOTED THAT DEEPENING THE BURN-UP IN THE LIGHT-WATER CYCLE COULD HELP LESSEN PROLIFERATION RISK SINCE GREATER AMOUNTS OF EVEN ISOTOPES OF PLUTONIUM ARE THEREBY CREATED, SUCH AS PU-240. THESE ISOTOPES HAVE VERY LONG HALF-LIVES AND HIGH RADIOACTIVITY, WHICH WOULD RENDER THEFT OR CLANDESTINE REPROCESSING FROM SPENT FUEL VERY DIFFICULT.

4. MOROZOV STATED THAT NUCLEAR POWER REPRESENTED FOUR PER CENT OF ALL ELECTRIC POWER GENERATED IN THE SOVIET UNION LAST YEAR. HE STATED THAT WITHIN 20 YEARS NUCLEAR POWER WOULD CONTRIBUTE 15 TO 20 PERCENT OF ALL ELECTRIC POWER GENERATED IN THE SOVIET UNION. HOWEVER, NUCLEAR POWER WILL ALSO BE USED FOR SUCH PURPOSES AS DIRECT HEAT SUPPLY FOR INDUSTRIAL USES, DISTRICT HEATING, GASIFICATION OF COAL, AND POSSIBLY THE PRODUCTION OF HYDROGEN. THUS NUCLEAR POWER IN THE NEXT TWO DECADES

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MIGHT REPRESENT 35 PER CENT OF POWER GENERATION. HE NOTED THAT US REPORTS DO NOT TAKE INTO SERIOUS CONSIDERATION THE NON-ELECTRIC USES OF NUCLEAR POWER, AND THEREBY SERIOUSLY UNDER-ESTIMATE ITS POTENTIAL.

5. COMMENT - THE DISCUSSION WAS CORDIAL AND OPEN, BUT WITH MARKED RETICENCE ON MOROZOV'S PART CONCERNING DATA ON SIZE OF SOVIET REPROCESSING AND FAST BREEDER PROGRAMS. MOROZOV WAS IN GOOD HUMOR NOTING WITH PLEASURE HIS FORTHCOMING VISIT TO THE US FOR THE ENERGY JCM. HE NOTED TO REP. WYDLER THAT SOVIETS CONSIDER BILATERAL COOPERATION IN ATOMIC ENERGY VERY USEFUL AND ASKED THAT CONGRESS CONTINUE TO SUPPORT THIS PROGRAM. END COMMENT.

6. FOR DOE HILL - APPRECIATE YOUR PROVIDING REPRESENTATIVE WYDLER AND DR. DUGAN SUBSTANCE OF ABOVE REPORT. TOON

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